

### Abstract of the Disclosure

A method of fabricating a semiconductor device including an interconnection is provided. The method is composed of covering a substrate with a metal film stack including a lower refractory metal film over the substrate, a lower protective layer of a first compound including metal disposed on an upper surface of the lower refractory metal film, a core metal film of the metal on an upper surface of the lower protective layer, an upper protective layer of a second compound including the metal disposed on an upper surface of the core metal film, and an upper refractory metal film disposed on an upper surface of the upper protective layer, patterning the metal film stack; and forming a side protective layer of a third compound including the metal on a side of the patterned core metal film.